

NRC FORM 255
(10-78)

DIVISION OF CONTRACTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

NOTIFICATION OF CONTRACT EXECUTION

CONTRACT NUMBER

NRC-03-81-130

MODIFICATION NUMBER

N/A

NEW MODIFICATION

OTHER (Specify)

TO: Darrell G. Eisenhut, Director
(Title)

Division of Licensing, NRR
(Organization)

Allen F. Glagola
(Contract Specialist)

4/6/81
(Date)

Technical Assistance Contracts Branch

DIVISION OF CONTRACTS, ADM

CONTRACT BASED ON:

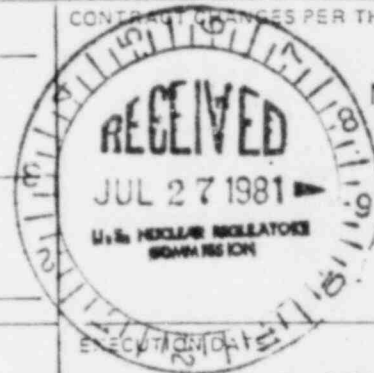
AUTHORIZATION NUMBER

RFPA-NRR-80-138

DATE

CONTRACT CHANGES PER THIS ACTION

N/A



April 3, 1981

TYPE OF CONTRACT

cost plus award fee

PROJECT TITLE

Technical Assistance in Support of NRC Reactor
Operating Licensings Action Program II

PERIOD OF PERFORMANCE

4/3/81 - 4/3/84

PRINCIPAL INVESTIGATOR

NRC AUTHORIZED REPRESENTATIVE

J. Donohew, NRR

FUNDING

B&R NUMBER

20-19-01-06

FIN NUMBER

B6891

AMOUNT

NEW NRC FUNDS

\$750,000

TOTAL FY 81 FUNDING

\$ 750,000

TOTAL NRC OBLIGATIONS

\$ 750,000

GOVERNMENT PROPERTY

ATTACHMENTS:

CONTRACT DOCUMENTS

NRC FORM 255
(10-78)

8107310539 810403
PDR CONTR
NRC-03-81-130 PDR

PDR

1. CONTRACT (Proc. Init. Ident.) NO. **NRC-03-81-130**

2. EFFECTIVE DATE **4/3/81**

3. REQUISITION/PURCHASE REQUEST/PROJECT NO. **RS-NRR-80-138**

4. CERTIFIED FOR NATIONAL DEFENSE UNDER BDSA REG. 2 AND/OR DMS REG. 1, RATING.

5. ISSUED BY **U.S. Nuclear Regulatory Commission**
 Division of Contracts
 Washington, D.C. 20555

6. ADMINISTERED BY (If other than block 5)

7. DELIVERY FOB DESTINATION
 OTHER (See below)

8. CONTRACTOR NAME AND ADDRESS **The Franklin Institute**
 Franklin Research Center
 20th and Benjamin Franklin Parkway
 Philadelphia, PA 19103

9. DISCOUNT FOR PROMPT PAYMENT **NET.**

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO ADDRESS SHOWN IN BLOCK **Article 3.5**

11. SHIP TO/MARK FOR **U.S. Nuclear Regulatory Commission**
 Attn: Mr. Jack Donohew
 Division of Licensing
 Washington, D.C. 20555

12. PAYMENT WILL BE MADE BY **See letter of credit procedures**

13. THIS PROCUREMENT WAS ADVERTISED, NEGOTIATED, PURSUANT TO: 10 U.S.C. 2304 (a)(1) 41 U.S.C. 252 (c)(10)

14. ACCOUNTING AND APPROPRIATION DATA **20-19-01-06 B6891 31x0200.201** (\$750,000.00 is covered by this appropriation only)

15. ITEM NO.	16. SUPPLIES/SERVICES	17. QUANTITY	18. UNIT	19. UNIT PRICE	20. AMOUNT
	Technical Assistance in support of NRC Reactor Operating Licensings Action Program II This is a cost-plus-award-fee contract Incremental funding <i>dupl 8106190343</i>				

21. TOTAL AMOUNT OF CONTRACT \$ **4,786,872.00**

CONTRACTING OFFICER WILL COMPLETE BLOCK 22 OR 26 AS APPLICABLE

22. CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 3 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)

26. AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.

23. NAME OF CONTRACTOR BY *J. Stover*
 (Signature of person authorized to sign)

24. NAME AND TITLE OF SIGNER (Type or print) **John R. Stover**
 Vice President - Administration

25. DATE SIGNED **4/3/81**

27. UNITED STATES OF AMERICA BY *M. J. Mattia*
 (Signature of Contracting Officer)

28. NAME OF CONTRACTING OFFICER (Type or print) **M. J. Mattia**

29. DATE SIGNED **4/3/81**

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THE CONTRACT SCHEDULE

Section 1.0 Description of WorkArticle 1.1 Scope of Work

Independently, and not as an agent of the Government, the contractor shall manage and review 300 Reactor Licensing Actions associated with the engineering disciplines listed below. The specific licensing actions will be selected from the topics listed below for each discipline or similar topics of equivalent complexity. The specific review assignments will be made in accordance with the procedure set forth in Article 5.12 below.

Specific Topics1.0 Reactor Systems Engineering1.1 Reactor Vessel Overpressure Protection

Incidents have occurred at pressurized water reactors involving over-pressurizing the reactor vessel while the reactor was in a solid cold shutdown condition. The NRC staff has required that licensees propose plant modifications to provide an overpressure mitigating system and technical specifications to govern the availability and operation of the mitigating system. The systems proposed generally include electrical control and mechanical pressure relief features. The contractor will review the licensees proposals for compliance with NRC criteria and model technical specifications.

1.2 Conversion to Standard Technical Specifications

Each nuclear power plant operating license is restricted by a set of specifications for safe operation referred to as the plant technical specifications. These specifications include requirements for the minimum number of safety systems which must be operable in the various permissible modes of plant operation and other general safety requirements. The NRC staff has developed a set of standard technical specifications for each of the major types of licensed power reactors. However, these standard technical specifications have not been backfitted across the board to all existing reactors.

Licensees occasionally propose amendments to existing technical specifications for operating convenience and improved safety. In addition the NRC staff has instituted a program for the orderly conversion of existing plant technical specifications to standard technical specifications all reactors when practical.

The contractor will review proposed individual technical specification amendments and complete conversions of technical specifications for compliance with the NRC standard set for the type of reactor involved. Proposed deviations from the NRC standard technical specifications will be evaluated from an overall nuclear safety systems point of view. Plant specific inputs required for the standard technical specifications will be evaluated against the individual plant systems design.

1.3 Boron Solubility During Long Term Cooling Following a LOCA

During long term cooling following a LOCA, the concentration of boric acid in the reactor vessel should be maintained below the solubility limits to avoid precipitation by providing a flushing flow of coolant through the reactor vessel. This flushing is accomplished either by simultaneous cold and hot leg injections of coolant, or by simultaneous cold leg injection and hot leg suction of coolant. Either method is acceptable; however, areas of concern have arisen on the long term acceptability of these methods. Five CE plant owners (Millstone 2, St. Lucie 1, Palisades, Ft. Calhoun 1, and Calvert Cliffs 1 and 2) have been requested to address these concerns. The contractor will review the responses of the licensees and provide written technical evaluations to the NRC.

2.0 Electrical Engineering

2.1 Status Annunciator and Indication Instrumentation Power Supply Systems

Safe operation of a nuclear plant requires that sufficient information be available to operators at all times to bring the plant to a safe shutdown condition in the event of a loss of offsite power or some other emergency. The contractor will review information provided by the licensees to determine if the power supply and bus arrangements for the status annunciator systems and indication instrumentation are adequate to assure that at least one channel of information is available at all times. The power supply system status annunciator system will also be reviewed to determine if it is adequate to assure that the operators will be aware of any degradation which may have occurred.

2.2 Degraded Voltage of Offsite and Onsite Power Distribution System and Interaction of the Offsite and Onsite Emergency Power Systems

The contractor will review and evaluate licensee's submittals concerning onsite emergency power and distribution systems to assess the susceptibility of the associated redundant safety-related electrical equipment to:

- a) Sustained degraded voltage conditions at the offsite power source.
- b) Interaction of the offsite and onsite emergency power systems.
- c) Voltage drop of the offsite and onsite power distribution systems.

The contractors evaluation will be based on criteria and positions established by the NRC staff.

2.3 RPS Power Supplies

During the review of Hatch 2 operating license application, NRC questioned the capability of the Class 1E reactor protection system (RPS) (and other Class 1E systems and components powered from the RPS power supply) to accommodate the effects of possible sustained abnormal voltage and frequency conditions from the non-Class 1E supply. These abnormal power conditions could be caused either by combinations of undetected single failures or by multiple failure caused by earthquakes. These abnormal power conditions could result in damage to the Class 1E systems and components with the attendant potential loss of capability to perform their intended safety function. NRC has determined that all BWRs may be vulnerable to the same potential failure as Hatch 2.

GE has proposed a design in conceptual form which will resolve NRC's concerns. The proposed modifications consist of the addition of two Class 1E "protection packages" in series between each motor generator set and its respective RPS bus, and the addition of two similar packages in series between the alternate power source and the RPS bus. Each protective package would include a breaker and associated overvoltage, undervoltage, and underfrequency relays. Each protective package would be testable and seismically qualified as Class 1E equipment. Some facilities may adopt the GE design; others are proposing plant-specific modifications.

The contractor will review the submittals of the licensees which request installation of the protective packages to make sure that they meet NRC criteria and provide written technical evaluations to the NRC.

2.4 Diesel Generator Reliability

Operation of a nuclear plant requires that the diesel generators supplying onsite emergency power are available on demand for safe shutdown of the reactor in the event of an accident or loss of offsite power. A report has been completed NUREG/CR-0560, "Enhancement of Onsite Emergency Diesel Generator Reliability." This report addresses operating experience problems that have had an effect on the reliability and availability of onsite emergency diesel generators at various nuclear plants, and recommendations for corrections of these problems. The report identifies thirteen problem areas which, with one exception, are generic to all emergency generator installations. The one exception applies to plants using emergency generators driven by diesel engines manufactured by the Electro-Motive Division of General Motors (EMD-GM). Information requests concerning these recommendations have been forwarded to all licensees of operating plants. The licensees will respond to these requests stating how they meet or will meet the recommendations. The Contractor will evaluate these responses to assure that each licensee has complied with and will implement the recommendations of NUREG/CR-0560. The end product will be the preparation of a Safety Evaluation Report (SER) for each operating plant.

3.0 Mechanical Engineering and Equipment Qualification

3.1 Electrical and Mechanical Equipment Environmental Qualification

The NRC staff has underway a program to systematically evaluate the ability of safety related equipment to function in the severe hostile environment it could be exposed to during a design basis accident (e.g., LOCA, Main Steam Line Break). The licensees and applicants for licenses are submitting documentation (topical reports, test reports, etc.) to demonstrate the ability of the equipment to function as required. The contractor will review this documentation for compliance with NRC criteria.

3.2 Seismic and Vibration Equipment Qualification

Equipment important to safety must be qualified to function in any vibratory environment that could result from normal operation or a seismic event. The utility licensees and applicants for licenses are required to provide data and analyses to demonstrate the qualification of this equipment. The contractor will review the licensees and applicants submittals for compliance with NRC criteria using a set of review guidelines to be developed by the NRC and contractor for different classes of plants and approved by the NRC prior to beginning the reviews. The review guidelines will be based on Regulatory Guide 1.100, IEEE Std. 344-1975, and the NRC Standard Review Plan Sections 3.9.2, 3.9.3, and 3.10.

3.3 PWR Feedwater Line Cracks

Cracks, cracklike indications, or fabrication defects have been found in the vicinity of feedwater nozzles at pressurized water reactors. The primary cause of cracking is thermal fatigue due to significant temperature differences between the top and bottom of the pipes when the facilities are at hot standby conditions and during startup and shutdown when the feedwater heaters are not being used.

The NRC PWR Pipe Crack Study Group has investigated the safety implication of this cracking incidence and will recommend both short term and long term corrective actions to minimize the potential for further cracking. The contractor will assist the staff to review the applicants/licensees surveillance programs to ensure that both short term and long term corrective measures to be recommended by the Pipe Crack Study Group are appropriately included in their surveillance programs. This work will require a strong background in the areas of stress and fatigue analyses, thermal hydraulics and reactor system operation, materials engineering, and ASME Code Sections III and XI.

3.4 BWR Feedwater Nozzle and Control Rod Drive Return Line (CRDRL) Nozzle Cracking

Cracking in feedwater nozzle blend radius or bore region has been observed over the past few years in the majority of operating BWRs with feedwater nozzle/sparger systems. The initiation of cracking is due to high cycle fatigue caused by fluctuations in water temperature within the vessel in the sparger-nozzle region during periods of low feedwater temperature when the flow may be unsteady and intermittent. Once initiated, the cracks are driven deeper by the larger pressure and thermal cycles associated with startup and shutdown. Cracks similar to those found in feedwater nozzles were also detected in CRDRL nozzles. The cause of cracking appears to be thermal fatigue.

The resolution of these issues was recently published in NUREG-0619 which contains the staff positions on implementation of corrective measures. The contractor will review the applicants/licensees surveillance program to ensure that the recommended corrective actions will be implemented. The contractor should have expertise in the areas of stress and fatigue analyses, reactor system operation, and materials engineering. Some knowledge of ASME Code Sections III and XI is also desirable.

3.5 Piping and Support Reanalysis

There have been several cases over the past couple of years where licensees have been required to perform piping and support reanalyses. These cases resulted from the discovery of either incorrect modeling assumptions or computer code errors. To resolve this type of problem the licensee must make an assessment of the extent of problem, obtain either verified modeling data or computer codes, perform reanalysis of the affected piping and supports and make any required field modifications. The contractor will be required to review and evaluate the information submitted by the licensee to document the appropriateness of his actions. This work will require a strong background in piping analysis and support design and experience in the application of the ASME Code, Section III.

4.0 Materials Engineering

4.1 Stress Corrosion Cracking in BWR Pressure Boundary Piping

Leaks and cracks in the heat-affected zones of welds that join austenitic stainless steel piping and associated components in BWRs have been observed in 304 stainless steel with diameters of 8 inches or less. The incidence of cracking has also been observed in some large diameter (>20 inches) stainless steel piping in a foreign country. All the cracks were attributed to intergranular stress corrosion cracking (IGSCC) due to the combination of high local stress, sensitization of material, and high oxygen content in the water.

The NRC staff will shortly issue an implementation document, NUREG-0313, Revision 1, which sets forth the revised acceptable methods to reduce the IGSCC susceptibility of BWR Code Class pressure boundary piping. Contractor personnel with a strong background in stress corrosion cracking problems and inservice inspection of nuclear piping will review the BWR applicants/licenses technical specifications to determine if they comply with the staff's positions to be specified in NUREG-0313, Revision 1.

5.0 Radiological Engineering and Health Physics

5.1 Radiological Effluent Technical Specifications (RETS) Implementation for Operating Reactors

The technical specifications which govern the operation of a power reactor presently include limits on the amount of radioactivity which may be released in effluents. Those technical specifications for operating power reactors must be amended to implement the requirements of 10 CFR Part 50, Appendix I and 40 CFR Part 190. The NRC staff has sent the model standard RETS to operating reactors as an example of an acceptable method of implementation. The operating reactor licensees have submitted proposals to amend their technical specifications. The RETS include specifications on effluent monitoring, environmental radiological monitoring, and radwaste equipment operation. Also, the RETS are supported by an Offsite Dose Calculational Manual and a (Solid Radwaste) Process Control Program. The contractor will review the licensee's proposed amendments and supporting documents for compliance with NRC criteria.

5.2 Radiation Monitoring to Allow Containment Purging and Vent Value Closure During Power Operation

The NRC is presently completing a generic review of the radiological consequences of containment venting or purging during power operation. The generic evaluation includes an assessment of the thyroid and whole body doses at the site boundary for the expected normal operation, for operation at the maximum permissible values of coolant activity levels and coolant leakage, and under accident conditions ranging from a small leak to the design basis LOCA. Based on the conclusions of this generic study, NRC will require limitation of containment venting/purging operations to assure that the radiological consequences are within the

applicable regulatory guidelines by appropriate tech spec's. Depending on the specific plant parameters, operating reactor licensees may submit technical specifications which differ from the generic evaluations. The contractor is to review such submittals to determine: (a) the applicability of the generic evaluation to the specific plant and site, (b) the need to modify the generic requirements for venting/purging, and (c) evaluate the radiological consequences of any deviations from the generic evaluation. The contractor is to document his review in a plant-specific technical evaluation report.

5.3 Radiological Steam Generator Replacement Programs

Steam generators at several PWRs are experiencing continued tube degradation. At three plants (Surry, Turkey Point, and Palisades) the degradation has become severe enough to warrant replacement of the steam generators. All three licensees have submitted their plans for replacement to the NRC. NRC review of the Surry Plan is complete and its review of the Turkey Point Plan is almost complete. These planned replacements (replacement is complete at Surry II) will involve occupational doses on the order of 2000 man-rem per reactor unit. The contractor will review other licensees plans for compliance with NRC criteria and regulations. The review will include the preparation of Technical Evaluation Reports, Environmental Statements, and expert testimony for ASLB hearings on the subject. The NRC criteria will be those established in the Surry and Turkey Point reviews covering such topics as:

- 1) Occupational radiation exposure estimates,
- 2) Radiological effluent estimates, and
- 3) Licensee efforts to maintain occupational radiation exposure as low as is reasonably achievable.

5.4 Control of Heavy Loads Over Spent Fuel Pool

Overhead handling systems are used to lift heavy objects in the vicinity of spent fuel in both PWRs and BWRs. If a heavy object, e.g., a spent fuel shipping cask or shielding block, were to fall or tip onto spent fuel in the storage pool or the reactor core during refueling and damage the fuel, there could be a release of radioactivity to the environment and a potential for radiation over-exposure to inplant personnel. NRC has initiated a generic review of the potential for such accidents at all operating reactors. For those facilities where this review indicates that damage to spent fuel, as a result of a heavy load drop, cannot be ruled out, it will be necessary to perform calculations regarding the radiological consequences of such an accident. The contractor will perform the radiological consequences calculations, including an analysis of the releases resulting from the failed fuel, transport of the radioactive material to the environment, and calculation of on-site and off-site doses. The contractor may review the licensee's submittals of the radiological consequences of such an accident.

5.5 Post LOCA Hydrogen Control

Hydrogen is generated following a loss-of coolant accident as a result of metal-water reaction in the core and by radiolysis of water. Several methods are typically used in order to maintain hydrogen at safe concentrations in the post accident containment atmosphere. These include: inerted atmosphere, hydrogen recombiners, and containment venting. The contractor will calculate the radiological consequences of venting the containment for post-accident hydrogen control. The analysis includes the calculation of decay factors for a source term specified by NRC, the transport of radioactive materials to the environment, and the resulting doses at the site boundary and low population zone boundary. The contractor may review the licensee's calculations of the radiological consequences of venting the containment. The contractor will review any licensee's proposed licensing amendments and supporting documents for compliance with NRC criteria.

6.0 HUMAN FACTORS ANALYSIS OF NPP CONTROL ROOMS, PROCEDURES AND PERSONNEL

Control room layouts found in present day nuclear power plants have been designed to accommodate the function to be performed rather than firstly relating to the human operator. This lack of human engineering in control room design as well as procedures to be utilized during all plant operating modes can lead to undesired consequences such as those which occurred during the TMI-2 accident. Therefore, several types of reviews and audits must be made to assure the adequacy of current day procedures, operator training and control room design. The contractor will review the licensee proposals, i.e., licensing actions, for implementation of NRC criteria developed in response to the TMI Action Plans.

6.1 Emergency Operating Procedures

The contractor will assist NRC in the preparation of guidelines to be implemented in a review of plant emergency operating procedures. Using these guidelines the contractor will review the procedures and prepare Technical Evaluation Reports to document the results of their reviews. The initial reviews will include the emergency operating procedures for such accidents as a small break LOCA, Steam generator tube rupture, Main Feedwater transient and inadequate core cooling.

6.2 Control Room Layout

A review of control room layouts will be performed using detailed guidelines furnished by the Staff. The contractor may be required to review and comment on the guidelines before beginning the reviews. It is anticipated that the reviews will include the use of common human factors monitoring equipment (e.g., light meters, noise level indicators). A Technical Evaluation Report will be generated for each control room reviewed.

6.3 Operator Qualifications

The contractor will review licensee's operator qualification and training programs against a set of NRC requirements with specific emphasis on:

- a. Adequacy of licensee's examination program for replacement operators (see NUREG-0094, NRC Operator Licensing Guides).
- b. Adequacy of licensee's requalification/certification program for existing operators and training facilities.

In addition the contractor will assist the NRC in developing requirements for licensee's training instructors and review the training programs for compliance.

7.0 Structural Engineering

7.1 Spent Fuel Pool Modifications

Modifications are frequently proposed by licensees to increase spent fuel storage capacity. The increase is accomplished by using higher density storage racks. The new spent fuel storage rack designs are reviewed for structural design, materials aspects, analysis procedures for all loads including seismic and impact loadings, loading combinations and structural acceptance criteria, and quality control for the fabrication and installation. The review is performed in accordance with Sections 3.7 and 3.8 of the Standard Review Plan and the associated branch technical position on spent fuel storage. The contractor will review the licensee proposed modification for compliance with NRC criteria. -

7.2 Structural Reevaluations for New or Increased Plant Loads

The staff occasionally finds it necessary to re-evaluate nuclear power plant structures in the light of new seismic and plant accident data.

Experience indicates that, on reassessment, seismic inputs tend to be raised and new plant accident loads are developed that require the reevaluation of plant structures to withstand these loadings. The contractor will perform qualitative and quantitative assessments of the suitability of plant structures to resist such loads as measured against current or modified acceptance criteria. This work requires background and knowledge of nuclear structural analysis procedures and industry concrete and steel design codes and practices.

Article 1.2 Reporting Requirements

The contractor shall furnish a monthly letter-type progress report by the fifteenth of the month for the previous month being reported. This report shall state in concise form:

- a. A short description of the project and objectives;
- b. A brief statement on what was actually accomplished in completing each assigned task during the reporting period;

- c. Funds committed during the reporting period;
- d. What is planned for accomplishment during the next reporting period;
- e. Preliminary or interim results, conclusions, trends, or other items of information that the contractor feels are of timely interest;
- f. Problems or delays that the contractor has experienced in the conduct of his effort;
- g. Specific action that the contractor would like NRC to undertake to alleviate a problem;
- h. Updated task and sub-task schedules, network flow chart, program milestone chart, program management summary, personnel assignments, and funding from those initially submitted in the plan of work and methodology.

The contractor shall prepare a report for each licensee submittal at the completion of his review. This report shall as a minimum include:

The licensee's submittals should be reviewed to determine the adequacy of the information presented with the information requirement stated by the staff. If the submittals are found to be incomplete, the contractor will provide requests to be transmitted to the NRC staff for forwarding to licensees to obtain additional information. The contractor will determine the extent to which the licensee's design criteria comply with criteria provided by the staff. The contractor will provide a written technical evaluation for each plant addressing the acceptability of the licensee's proposed design and technical specification modifications as appropriate and the adequacy of these modifications. Copies of all progress reports shall be submitted in accordance with the above criteria and shall be forwarded to the following NRC personnel:

Fee Determination Official (FDO)	-	Darrell Eisenhut
Performance Evaluation Board (PEB)	-	*
Evaluation Coordinator	-	A. F. Glagola
Performance Monitors	-	All current monitors

The contractor shall prepare and arrange the monthly progress meeting to be held each month. Final arrangements for the meeting (i.e., agenda, date, time, and location) shall be made with the NRC Project Officer named in Article 5.1-Sec.5.0. Generally, these meetings will be held at the contractor's facilities in Philadelphia, Pennsylvania.

* E. Butcher, M.J. Mattia, J. Donohew, G. Lainas, J. Olshinski.

Article 1.3 Level of Effort

During the performance of work under this contract, the contractor agrees to utilize personnel in the following categories for the approximate time indicated.

<u>Category for Franklin Research Center</u>	<u>Approximate Person-Hours</u>
Department Director	1,500
Laboratory Manager	3,000
Principal Scientist/Engr.	6,000
Sr. Staff Scientist/Engr.	14,712
Sr. Research Scientist/Engr.	19,500
Res. Scientist I/Res. Engr. I	9,000
Res. Scientist II/Res. Engr. II	6,000
Research Assistant	1,800
Res. Scientist III/Res. Engr. III	3,000
Report Preparation - Technical	1,500
Report Preparation - Tying	1,500
TOTAL	67,512

The contractor agrees to use his best efforts to accomplish all the work outlined or referenced above. His obligation will be deemed complete if the work is performed in accordance with high standards of scientific and professional skill, and the approximate level of effort has been diligently applied; except, however, all other requirements must be met including delivery of reports and materials as may be required under the contract.

Section 2.0 Performance and Delivery

Article 2.1 Period of Performance

Performance of this contract shall begin on April 3, 1981 and shall not extend beyond April 3, 1984, unless the period is extended by amendment of the contract.

Article 2.2 Place of Performance

The work under this contract shall be performed at the Contractor's facilities located in Philadelphia, Pennsylvania.

Article 2.3 Option to Extend the Terms and Increase the Number of Reactor Licensing Action under the Contract

The Government may at its option increase the number of Licensing Actions to be reviewed up to a maximal of 300 and extend the term of the contract for an additional one, two or three (3) years. The Contracting Officer shall give preliminary notice of the Government's intention to exercise said option at least 120 days before this contract is to expire. The Government at anytime within this 120 day period may exercise this option, if at all, by written or telegraphic notice signed by the Contracting Officer and sent within the option period specified. (Such a preliminary

notice will not be deemed to commit the Government to exercise of said option.) Within thirty days after receipt of the written notice of the Government's intent to renew, the Contractor shall submit a cost proposal and a Small and Disadvantaged Business Subcontracting Plan, if required to the Government. If the Government exercise this option for a one year period, the contract as renewed shall be deemed to include this option provision. However, the total duration of this contract, including the exercise of any options under this clause, shall not exceed (6) years.

Section 3.0 Consideration and Payment

Article 3.1 Estimated Cost, Base Fee, and Award Fee

1. [REDACTED]
2. The Contractor shall be reimbursed for all allowable costs incurred, and accepted by the Contracting Officer, not to exceed the estimated amount of [REDACTED].
3. Award Fee may also be earned under this contract as provided by Article 3.2, Award Fee.
4. Total funds currently available for payment and allotted to this contract is \$750,000. 00 of which \$683,952.00 represents the estimated reimbursable costs, and of which \$66,048.00 represents the award fee for the period April 3, 1981 through September 30, 1981. For further provisions on funding, see the General Provision entitled: "Limitation of Funds", clause No. 3.
5. It is estimated that the amount currently allotted hereby will cover the performance period April 3, 1981 through October 31, 1981.

Article 3.2 Base and Award Fee

An award fee pool of [REDACTED] is hereby established for the period April 3, 1981 through September 30, 1981. Evaluation of award fee earned for the period April 3, 1981 through September 30, 1981 shall be accomplished quarterly. Evaluation of award fee earned for the period April 3, 1981 through April 3, 1984 shall be accomplished as follows:

April 3, 1981	through	June 30, 1981
July 1, 1981	"	September 30, 1981
October 1, 1981	"	March 30, 1982
April 1, 1982	"	September 30, 1982
October 1, 1982	"	March 30, 1983
April 1, 1983	"	September 30, 1983
October 1, 1983	"	December 30, 1983
January 1, 1984	"	April 3, 1984

Preliminary evaluation shall be conducted by a Performance Evaluation Board (PEB). The board shall recommend the fee award to the NRC Fee Determination Official (FDO). The final evaluation and interim determination as to the amount of award fee earned during an evaluation

Article 3.3 - Payment of Indirect Costs

Pending establishment of final indirect cost rates for any period, billing and reimbursement of indirect costs pursuant to General Provision No. 5.5, Negotiated Overhead Rates, the following provisional rates applied to the bases identified shall be in effect unless otherwise modified:

<u>Identification of Type of Rate</u>	<u>Rate</u>	<u>Base</u>
Overhead	●	Total Direct Labor and Fringe Benefits
G & A	See below	See Below



The above provisional rates apply for the period April 3, 1981 through January 1, 1982.

The following provisional rates apply to bases identified and shall apply for the period April 3, 1981 through December 31, 1981 unless otherwise modified:

A provisional G & A rate of ● is applied to all FRC costs except subcontracting costs. A provisional G & A rate of ● is applied to the first ● of each subcontract. A fixed G & A rate of ● is applied to those subcontracting costs in excess of ● but not to exceed ● for each subcontract. A fixed G & A rate of ● is applied to each subcontracting costs exceeding ●

Article 3.4 - Payment of Base and Award Fee

The fees provided for in Article 3.1, "Estimated Cost, Base Fee, Awards Fee and Obligation of Funds", shall be paid as specified in Attachment A.

Article 3.5 - Letter of Credit

This contract shall be funded under a Nuclear Regulatory Commission (NRC) Letter of Credit, against which the Contractor will withdraw funds pursuant to NRC Letter of Credit Procedures and Instructions for Recipient Organizations as approved by the U. S. Department of Treasury on April 1, 1977.

The Contractor shall request cash drawdowns only as and when actually needed for its disbursements, and shall make timely reporting as required by NRC with the understanding that failure to adhere to these commitments may cause the unobligated portion of the Letter of Credit to be revoked.

In no event shall the accumulated total of funds withdrawn for the account of this contract against such Letter of Credit exceed the presently obligated amount in the contract as covered by Article 3.1 subparagraph 4.

When so requested in writing by the Contracting Officer, the Contractor shall repay to the Government such part of the unliquidated balance of the advance payments as shall, in the opinion of the Contracting Officer, be in excess of the Contractor's current needs or in excess of the contract's estimated cost.

If upon completion or termination of this contract, all amounts obtained by the Contractor under this Letter of Credit have not been fully liquidated by authorized charges under the contract, the balance thereof shall be deducted from any sums otherwise due to the Contractor from the Government, and any excess funds shall be repaid by the Contractor to the Government upon demand.

The Letter of Credit Identification Number for The Franklin Institute is 31-00-0002

31-00-0002

Upon the happening of any of the following events of default, (1) termination of this contract by reason of fault of the Contractor; (2) a finding by the Administering Office that the Contractor (i) has failed to observe any of the covenants, conditions, or warranties of these provisions or has failed to comply with any material provision of this contract, or (ii) has so failed to make progress, or is in such unsatisfactory

financial condition, as to endanger performance of this contract, or (iii) has allocated inventory to this contract substantially exceeding reasonable requirements, or (iv) is delinquent in payment of taxes of the costs of performance of this contract in the ordinary course of business; (3) appointment of a trustee, receiver or liquidator for all or a substantial part of the Contractor's property, or institution of bankruptcy, reorganization, arrangement or liquidation proceedings by or against the contractor; (4) service of any writ of attachment, levy of execution, or commencement of garnishment proceedings with respect to the Special Bank Account; or (5) the commission of an act of bankruptcy; the Government, without limiting any rights which it may otherwise have, may, in its discretion and upon written notice to the Contractor, withhold further withdrawals from the Special Bank Account and withhold further payments on this contract. Upon the continuance of any such events of default for a period of thirty (30) days after such written notice to the Contractor, the Government may, in its discretion, and without limiting any other rights which the Government may have, take the following additional actions as it may deem appropriate in the circumstances: (1) Withdraw all or any part of the balance in the Special Bank Account by checks payable to the Treasurer of the United States signed solely by the Countersigning Agency and apply such amounts in reduction of advance payments then outstanding hereunder and in reduction of any claims of the Government against the Contractor; (2) Charge interest on advance payments outstanding during the period of any such default at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 Stat. 97 for the Renegotiation Board:

No interest shall be charged for advance payments made hereunder, except interest during a period of default as provided in the preceding paragraph. The Contractor shall charge interest at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41; 85 Stat. 97, for the Renegotiation Board on subadvances or downpayments to subcontractors, and such interest will be credited to the account of the government. However, interest need not be charged in subadvances on subcontracts with nonprofit educational or research institutions for experimental, developmental or research work.

Article 3.6 Billing Instructions

In addition to the procedures specified in Attachment D, U.S. N.R.C letter of Credit Instructions for Recipient Organizations, the Contractor shall forward concurrently two (2) copies of each monthly invoice to the Contracting Officer.

Article 3.7 - Provisional Award Fee Payment

Provisional payment of award fee shall be made in an amount not to exceed \$256,440.00 (based on one-half of the award fee and representing the "expected level of effort").

During the period April 3, 1981 - April 3, 1984, the Contractor may bill for provisional payment of award fee at the rate of 1/2 of the total award fee dollars available for the evaluation period. These billings shall be made monthly and prorated accordingly.

Interim fee payment will cease when:

1. The fee awarded exceeds the provisional fee.
2. The Contracting Officer determines that the projected award fee will be less than the fee paid under this provision.

Payments under the provisions of this Article shall be credited to any amount awarded under Article 3.2 - Award Fee.

In the event that the payment under the provisions of this Article should exceed that amount which can be awarded under the provisions of Article 3.2 - Award Fee, then such overpayment may be deducted from allowable costs due and payable or paid under this contract.

Section 4.0 Inspection and Acceptance

Article 4.1 - Inspection

Inspection of the services and deliverables called for hereunder shall be performed by the NRC Project Officer specified in Article 5.1.

Article 4.2 - Acceptance

Acceptance of the services and deliverables called for hereunder shall be accomplished by the Contracting Officer, or his duly authorized representative, who for the purposes of this contract shall be the NRC Project Officer named in Article 5.1.

Section 5.0 Special Provisions

Article 5.1 - Identification of NRC Project Officer

Mr. J. Donohew is designated by the Contracting Officer as Project Officer under this contract. Authorities and responsibilities as delineated in Article's 5.2 and 5.3.

Article 5.2 - Responsibilities of the NRC Project Officer

- (a) The Project Officer is responsible for: (1) Monitoring the contractor's technical progress, including the surveillance and assessment of performance and recommending to the Contracting Officer changes in requirements; (2) interpreting the statement of work; (3) performing technical evaluation as required; (4) performing technical inspections and acceptances required by this contract; and (5) assisting the contractor in the resolution of technical problems encountered during performance. Within the purview of this authority, the representative is authorized to approve payment vouchers for supplies/services required under the contract. The Contracting Officer is responsible for directing or negotiating any changes in terms, conditions, or amounts cited in the contract.

- (c) If the contractor receives guidance from the Project Officer which the contractor feels is not valid under the criteria cited above, the contractor shall immediately notify the Project Officer. If the two are not able to resolve the question within five days, the contractor shall notify the Contracting Officer.

Article 5.3 Technical Direction

- (a) The NRC Project Officer named in Article 5.1 of this contract is responsible for guiding the technical aspects of the project and for the general surveillance of the work performed. The Project Officer is not authorized to make any commitments or any changes which constitute work not within the general scope of this contract, change the expressed terms and conditions incorporated into this contract, or constitute a basis for any increase in contract price or extension of the contract Period of Performance.
- (b) Technical direction must be within the general scope of work state in the contract. The Project Officer does not have the authority to and may not issue any technical direction which:
- (1) Constitutes an assignment of additional work outside the general scope of the contract.
 - (2) Constitutes a change as defined in the clause of the General Provisions, entitled "Changes."
 - (3) In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.

(4) Changes any of the expressed terms, conditions or specifications of the contract.

(c) ALL TECHNICAL DIRECTIONS SHALL BE ISSUED BY THE PROJECT OFFICER OR HIS AUTHORIZED REPRESENTATIVE IN WRITING OR SHALL BE CONFIRMED BY HIM IN WRITING WITHIN TEN (10)

WORKING DAYS AFTER VERBALLY AUTHORIZED: A copy of said written authorization shall be submitted to the Contracting Officer. If the contractor receives guidance from the Project Officer or his authorized representative which the contractor feels is not valid under the criteria cited above, the contractor shall immediately notify the Project Officer. If the Project Officer and the contractor are not able to resolve the question within five days, the contractor shall notify the Contracting Officer.

(d) In the event the Project Officer desires a change to the contract within one or more of the categories as defined in (1) through (4) of paragraph B above, he must direct such request to the Contracting Officer. The Contracting Office will handle the request in accordance with applicable laws and regulations.

(e) Any unauthorized commitment or direction issued by the Project Officer may result in an unnecessary delay in the Contractor's performance, and may even result in the contractor expending his funds unallowable costs under the contract.

(f) For guidance from the Project Officer to the contractor to be valid, it must: (1) be consistent with the description of work set forth in this contract; (2) not constitute new assignment of work or change to the expressed terms, conditions, or specifications incorporated into this contract; (3) not constitute a basis for an extension to the period of performance or contract delivery schedule; (4) not constitute a basis for any increase in the contract price.

Article 5.4 Private Use and Protection of Unclassified Government Information and Contract Information and Data

- (a) Except as specifically authorized by this contract, or as otherwise approved by the Contracting Officer, records, data, information, documents and material developed or acquired by or furnished to the contractor in the performance of this contract shall be used only in connection with the work performed under this contract. The contractor shall, upon completion or termination of this contract, transmit to the Commission all records or other information, documents and material, and any copies thereof, furnished by the Commission to the contractor in the performance of this contract.
- (b) The contractor shall be responsible for safeguarding from unauthorized disclosure any information or other documents and material exempt from public disclosure by the Commission's regulations and made available to the contractor in connection with the performance of the work under this contract. The contractor agrees to conform to all regulations, requirements, and direction of the Commission with respect to such material.
- (c) The contractor's duties under this clause shall not be construed to limit or affect in any way the contractor's obligation to conform to all security regulations and requirements, of the Commission pertaining to classified information and material.

Article 5.5 Protection of Proprietary and Company Confidential Information

If proprietary or company confidential data is provided to the contractor by the Government in connection with this contract, the contractor agrees to safeguard such information and agrees not to release such information to any person not directly involved in the performance of work under this contract unless such release is authorized in writing by the Contracting Officer. Upon completion or termination of this contract, all copies of any such proprietary or company confidential data shall be returned to the Commission.

Article 5.6 Disclaimer

The following notice shall be added to any reports prepared under the provisions of this contract: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, or any of their employees, makes any warranty, expressed or implied, or assume any legal liability or responsibility for any third party's use, or the results of such use, of any information, apparatus, product or process disclosed in this report, or represents that its use by such third party would not infringe privately owned rights."

Article 5.7 - Continuity of Services

In recognition of the fact that the functions covered under this contract are in support of MRC programs, and require uninterrupted performance; that upon expiration of this contract, the services hereunder may be provided by the Government or a successor Contractor, as a result of a competitive solicitation, and any successor will require phase-in training; that the retention of personnel experienced in the work covered hereunder by any successor is important to the Government; the Contractor agrees as follows:

1. To provide the necessary resources to complete those work items commenced during the period of this contract or any renewal thereof, which would not otherwise have been completed, within such a period.
2. To provide phase-in, phase-out services for a period not to exceed sixty (60) days, commencing the day after expiration of the contract, to the extent required by the Government, and expeditiously negotiate an equitable adjustment to the estimated cost of the contract for such services, to be provided by continuing the assignment of qualified personnel then currently assigned to the contract.
3. Upon selection of a successor Contractor, to jointly prepare with said successor, a mutually agreeable plan for phase-in, phase-out operations. Said plan shall set forth in detail the training program for the successor with a proposed date by which the successor will assume responsibility for work performance. Prior to said date the contractor shall retain full responsibility for work performed. This plan shall be submitted to the Contracting Officer for his approval prior to expiration of this contract, and implementation in accordance therewith. However, it is understood and agreed that the foregoing is subject to the "Limitation of Cost" or "Limitation of Funds" clause of this contract.

Article 5.8 - Key Personnel

"Pursuant to General Provision No. 2.3 entitled, "Key Personnel", the following individuals are considered to be essential to the work being performed hereunder:

<u>Name</u>	<u>Title</u>
Dr. L. Zudans	Project Director
Dr. S. Carfagno	Project Manager
Mr. C. Crane	Assistant Project Manager

Article 5.9 - Government Furnished Material/Data

The Government shall furnish to the contractor all vital and necessary data/material in order for the contractor to perform the work above.

Article 5.10 - Representations and Certifications

The offeror representations and certifications submitted in response to REP No. RS-NRR-80-138 as modified by the Contractor's letter dated August 28, 1981.

Article 5.11 - Subcontracts

The contractor is hereby authorized to enter into negotiations with its proposed subcontractors and upon consummation of negotiations, forward to the Contracting Officer the necessary documentation as required by General Provision No. 2.5 entitled Subcontracts.

Article 5.12 - Guidelines for Work Flow

NRC will forward to FRC preliminary work assignments identified as Tentative Work Assignment A.B.C., etc. All such work assignments must be signed by the Project Officer. Specific NRC individuals will be identified in the letter as authorized point(s) of contact regarding that particular assignment. Franklin will review the tentative assignment, provide its comments, propose a schedule for completion of the work, and estimate the technical staff resources required in a letter to the Project Officer.

After receipt at NRC, the Franklin proposed schedule will be discussed, and following agreement with FRC, final work assignments identified as Assignment #1, 2, 3, etc. will be issued by the Project Officer. The work performance period will be in accordance with the mutually agreed upon schedule in the final assignment letter. The schedule may be modified by mutual agreement.

Prior to receipt of the final assignment letter, Franklin personnel should not begin any work unless authorized by the Project Officer. Any verbal authorization to begin work will be verified in writing within 10 working days.

Following agreement and receipt of a final work assignment, Franklin may enter into discussions or correspond with any of the individuals identified in the work assignment(s). Franklin is not to conduct any discussions with licensees for any purpose whatsoever without NRC representation either at physical meetings or through conference telephone conversations except as authorized either verbally or in writing by the Project Officer or his authorized representative.

ARTICLE 5.13

SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN (NEGOTIATED)

- A. The offeror acknowledges that it is aware of the subcontracting plan requirements in this provision, and, if it is the apparent successful offeror, agrees to negotiate a plan which includes :
1. Percentage goals (expressed in terms of percentage of total planned subcontracting dollars) for the utilization as subcontractors of small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals; (For the purposes of the subcontracting plan, the contractor shall include all purchases which contribute to the performance of the contract, including a proportionate share of products, services, etc. whose costs are normally allocated as indirect or overhead costs.)
 - ✓ 2. The name of an individual within the employ of the offeror who will administer the subcontracting program of the offeror and a description of the duties of such individual;
 3. A description of the efforts the offeror will take to assure that small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals will have an equitable opportunity to compete for subcontracts;
 4. Assurances that the offeror will include the clause entitled Utilization of Small Business Concerns and Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals in all subcontracts which further subcontracting opportunities and to require all subcontractors (except small business concerns) who receive subcontracts in excess of \$500,000, or in the case of a contract for the construction of any public facility, \$1,000,000, to adopt a plan similar to the plan agreed to by the offeror;
 5. Assurances that the offeror will submit such periodic reports and cooperate in any studies or surveys as may be required by the contracting agency or the Small Business Administration in order to determine the extent of compliance by the offeror with the subcontracting plan; and
 6. A recitation of the types of records the offeror will maintain to demonstrate procedures which have been adopted to comply with the requirements and goals set forth in the plan, including the establishment of source lists of small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals; and efforts to identify and award subcontracts to such small business concerns.
- B. The offeror understands that:
1. No contract will be awarded unless and until an acceptable plan is negotiated with the contracting officer and that an acceptable plan will be incorporated into the contract, as a material part thereof.
 2. An acceptable plan must, in the determination of the contracting officer, provide the maximum practicable opportunity for small business concerns and small business concerns owned and controlled by socially and economically disadvantaged persons to participate in the performance of the contract.

3. If a subcontracting plan acceptable to the contracting officer is not negotiated within the time limits prescribed, the offeror shall be ineligible for an award. The contracting officer shall notify the contractor in writing of his reasons for determining a subcontracting plan to be unacceptable. Such notice shall be given early enough in the negotiation process to allow the contractor to modify the plan within the time limits prescribed.
4. Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the contracting officer in determining the responsibility of the offeror for award of the contract.
5. It is the offeror's responsibility to develop a satisfactory subcontracting plan with respect to both small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals and that each such aspect of the offeror's plan will be judged independently of the other

C. Subcontracting plans are not required of small business concerns.

D. The failure of any contractor or subcontractor to comply in good faith with (1) the clause entitled Utilization of Small Business Concerns and Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals or (2) an approved plan required by this Small Business and Small Disadvantaged Business Subcontracting Plan (Negotiated) provision, will be a material breach of of such contract or subcontract.

E. Nothing contained in this provision supersedes the requirements of Defense Manpower Policy 4A or any successor policy.

F. If the prime contract is for a commercial product (defined below), the required subcontracting plan may relate to the company's production of the item generally (both for the Government contract and for regular commercial sale) rather than solely to the item being procured under the government contract. In such cases, the contractor shall be required to submit one company-wide, annual plan to be reviewed for approval by the first agency with which he enters into a prime contract (which requires a subcontracting plan) during the fiscal year. The approved plan will remain in effect for the entire fiscal year.

Commercial products are defined as products in regular production sold in substantial quantities to the general public and/or industry at established market or catalog prices.

G. In negotiating subcontracting plans, the contracting officer shall take into account a prime contractor's stated inability to subcontract due to an existing "make-or-buy" policy. A "make-or-buy" policy concerns the major subsystems, assemblies, and components which the contractor manufactures, develops, or assemblies in his own facilities, and those which it obtains elsewhere by contract.

SECTION 6.0 GENERAL PROVISIONS

ARTICLE 6.1 -- GENERAL PROVISIONS/ALTERATIONS

This contract is subject to the attached provisions of Appendix A, General Provisions, entitled "Cost Type Research and Development Contracts With Commercial Organizations," dated 11/80.

ARTICLE 6.2 - ALTERATIONS TO GENERAL PROVISIONS

The following clauses are added:

6.2.1 Labor Surplus Area Subcontracting Program (1-1.805-3(b))

(a) The Contractor agrees to establish and conduct a program which will encourage labor surplus area concerns to compete for subcontracts within their capabilities. In this connection, the Contractor shall--

(1) Designate a liaison officer who will (i) maintain liaison with duly authorized representatives of the Government on labor surplus area matters, (ii) supervise compliance with the Utilization of Concerns in Labor Surplus Areas clause, and (iii) administer the Contractor's "Labor Surplus Area Subcontracting Program;"

(2) Provide adequate and timely consideration of the potentialities of labor surplus area concerns in all "make-or-buy" decisions;

(3) Assure that labor surplus area concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of labor surplus area concerns;

(4) Maintain records showing the procedures which have been adopted to comply with the policies set forth in this clause and report subcontract awards (see 41 CFR 1-16.804-5 regarding use of Optional Form 61). Records maintained pursuant to this clause will be kept available for review by the Government until the expiration of 1 year after the award of this contract, or for such longer period as may be required by any other clause of this contract or by applicable law or regulations; and

(5) Include the Utilization of Concerns in Labor Surplus Areas clause in subcontracts which offer substantial labor surplus area subcontracting opportunities.

(b) (1) The term "labor surplus area" means a geographical area identified by the Department of Labor as an area of concentrated unemployment or under-employment or an area of labor surplus.

(2) The term "concern located in a labor surplus area" means a labor surplus area concern.

(3) The term "labor surplus area concern" means a concern that, together with its first-tier subcontractors, will perform substantially in labor surplus areas.

(4) The term "perform substantially in labor surplus areas" means that the costs incurred on account of manufacturing, production, or appropriate services in labor surplus areas exceed 50 percent of the contract price.

(c) The Contractor further agrees to insert, in any subcontract hereunder which may exceed \$500,000 and which contains the Utilization of Concerns in Labor Surplus Areas clause, provisions which shall conform substantially to the language of this clause, including this paragraph (c), and to notify the Contracting Officer of the names of such subcontractors.

6.2.2 Utilization of Women-Owned Business Concerns (Over \$10,000)

(a) It is the policy of the United States Government that women-owned businesses shall have the maximum practicable opportunity to participate in the performance of contracts awarded by any Federal agency.

(b) The Contractor agrees to use his best efforts to carry out this policy in the award of subcontracts to the fullest extent consistent with the efficient performance of this contract. As used in the contract, a "women-owned business" concern means a business that is at least 51% owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management. "Women" mean all women business owners.

6.2.3 Women-Owned Business Concerns Subcontracting Program (Over \$500,000 or \$1,000,000 for Construction of Any Public Facility)

(a) The Contractor agrees to establish and conduct a program which will enable women-owned business concerns to be considered fairly as subcontractors and suppliers under this contract. In this connection, the contractor shall:

- (1) Designate a liaison officer who will administer the Contractor's "Women-Owned Business Concerns Program."
- (2) Provide adequate and timely consideration of the potentialities of known women-owned business concerns in all "make-or-buy" decisions.
- (3) Develop a list of qualified bidders that are women-owned businesses and assure that known women-owned business concerns have an equitable opportunity to compete for subcontracts, particularly by making information on forthcoming opportunities available, by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of women-owned business concerns.
- (4) Maintain records showing (i) procedures which have been adopted to comply with the policies set forth in this clause, including the establishment of a source list of women-owned business concerns; (ii) awards to women-owned businesses on the source list by minority and non-minority women-owned business concerns; and (iii) specific efforts to identify and award contracts to women-owned business concerns.
- (5) Include the "Utilization of Women-Owned Business Concerns" clause in subcontracts which offer substantial subcontracting opportunities.
- (6) Cooperate in any studies and surveys of the Contractor's women-owned business concerns procedures and practices that the Contracting Officer may from time-to-time conduct.

- (7) Submit periodic reports of subcontracting to women-owned business concerns with respect to the records referred to in subparagraph (4) above, in such form and manner and at such time (not more often than quarterly) as the Contracting Officer may prescribe.

(b) The Contractor further agrees to insert, in any subcontract hereunder which may exceed \$500,000 or \$1,000,000 in the case of contracts for the construction of any public facility and which offers substantial subcontracting possibilities, provisions which shall conform substantially to the language of this clause, including this paragraph (b), and to notify the Contracting Officer of the names of such subcontractors.

(c) The contractor further agrees to require written certification by its subcontractors that they are bona fide women-owned and controlled business concerns in accordance with the definition of a women-owned business concern as set forth in the Utilization Clause 1(b) above at the time of submission of bids or proposals.

6.2.4 Price Reduction for Defective Cost or Pricing Data (1-3.814-1(a))

If any price, including profit or fee, negotiated in connection with this contract or any cost reimbursable under this contract was increased by any significant sums because:

(a) The Contractor furnished cost or pricing data which was not accurate, complete and current as certified in the Contractor's Certificate of Current Cost or Pricing Data;

(b) A subcontractor, pursuant to the clause of this contract entitled "Subcontractor Cost or Pricing Data" or "Subcontractor Cost or Pricing Data--Price Adjustments" or any subcontract clause therein required, furnished cost or pricing data which was not accurate, complete and current as certified in the subcontractor's Certificate of Current Cost or Pricing Data;

(c) A subcontractor or prospective subcontractor furnished cost or pricing data which was required to be accurate, complete and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which was not accurate, complete and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(d) The Contractor or a subcontractor or prospective subcontractor furnished any data, not within (a), (b) or (c) above, which was not accurate as submitted; the price or cost shall be reduced accordingly and the contract shall be modified in writing as may be necessary to reflect such reduction. However, any reduction in the contract price due to defective subcontract data of a prospective subcontractor when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor: Provided, The actual subcontract price was not affected by defective cost or pricing data.

(Note: Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with certain subcontracts, it is expected that the Contractor may wish to include a clause in each such subcontract requiring the subcontractor to appropriately indemnify the Contractor. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by his low tier subcontractors.)

6.2.5 Price Reduction for Defective Cost or Pricing Data - Price Adjustments
(1-3.814-1(b))

(a) This clause shall become operative only with respect to any modification of this contract which involves aggregate increases and/or decreases in costs plus applicable profits in excess of \$100,000 unless the modification is priced on the basis of adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation. The right to price reduction under this clause is limited to defects in data relating to such modification.

(b) If any price, including profit, or fee, negotiated in connection with any price adjustment under this contract was increased by any significant sums because:

(i) The Contractor furnished cost or pricing data which was not accurate, complete and current as certified in the Contractor's Certificate of Current Cost or Pricing Data;

(2). A subcontractor, pursuant to the clause of this contract entitled "Subcontractor Cost or Pricing Data" or "Subcontractor Cost or Pricing Data--Price Adjustments" or any subcontract clause therein required, furnished cost or pricing data which was not accurate, complete and current as certified in the subcontractor's Certificate of Current Cost or Pricing Data;

(3) A subcontractor or prospective subcontractor furnished cost or pricing data which was required to be accurate, complete and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which was not accurate, complete and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(4) The Contractor or a subcontractor or prospective subcontractor furnished any data, not within (1), (2) or (3) above, which was not accurate, as submitted; the price shall be reduced accordingly and the contract shall be modified in writing as may be necessary to reflect such reduction. However, any reduction in the contract price due to defective subcontract data of a prospective subcontractor, when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor. Provided the actual subcontract price was not affected by defective cost or pricing data.

(Note: Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with certain subcontracts, it is expected that the Contractor may wish to include a clause in each such subcontract requiring the subcontractor to appropriately indemnify the Contractor. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by his lower tier subcontractors.)

(c) Failure to agree on a reduction shall be a dispute concerning a question of fact within the meaning of the "Disputes" clause of this contract.

6.2.6 Subcontractor Cost and Pricing Data (1-3.814-3(a))

(a) The Contractor shall require subcontractors hereunder to submit, actually or by specific identification in writing, cost or pricing data under the following circumstances:

(1) Prior to the award of any subcontract the amount of which is expected to exceed \$100,000 when entered into;

(2) Prior to the pricing of any subcontract modification which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000; except where the price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation.

(b) The Contractor shall require subcontractors to certify, in substantially the same form as that used in the certificate by the Prime Contractor to the Government, that to the best of their knowledge and belief, the cost and pricing data submitted under (a) above is accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract change or modification.

(c) The Contractor shall insert the substance of this clause including this paragraph (c) in each subcontract hereunder which exceeds \$100,000 when entered into except where the price thereof is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation. In each such expected subcontract hereunder in excess of \$100,000, the Contractor shall insert the substance of the following clause:

SUBCONTRACTOR COST OR PRICING DATA-
PRICE ADJUSTMENTS

(a) Paragraphs (b) and (c) of this clause shall become operative only with respect to any modification made pursuant to one or more provisions of this contract which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000. The requirements of this clause shall be limited to such contract modifications.

(b) The Contractor shall require subcontractors hereunder to submit, actually or by specific identification in writing, cost or pricing data under the following circumstances:

(1) Prior to award of any subcontract, the amount of which is expected to exceed \$100,000 when entered into;

(2) Prior to the pricing of any subcontract modification which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000; except where the price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation.

6.2.6 Subcontract Cost and Pricing Data (1-3.814-3(a)) Cont'd

(c) The Contractor shall require subcontractors to certify, in substantially the same form as that used in the certificate by the Prime Contractor to the Government, that to the best of their knowledge and belief the cost and pricing data submitted under (b) above is accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract change or modification.

(d) The Contractor shall insert the substance of this clause including this paragraph (d) in each subcontract hereunder which exceeds \$100,000 when entered into.

6.2.7 Cost Accounting Standards--Nondefense Contract (1-3.1204-2(a))

(a) Unless the Administrator of General Services has prescribed rules or regulations exempting the Contractor or this contract from standards, rules, and regulations promulgated by the Cost Accounting Standards Board, the Contractor, in connection with this contract, shall:

(1) Follow consistently the cost accounting practices established or disclosed as required by regulations of the Cost Accounting Standards Board and administered under the Administration of Cost Accounting Standards clause. If any change in disclosed practices is made for purposes of any contract or subcontract subject to those disclosure requirements, the change must be applied in a consistent manner to this contract.

(2) Comply with all cost accounting standards which the Contractor is required to comply with by reason of concurrent performance of any contract or subcontract subject to the Cost Accounting Standards clause (4 CFR 331) and administered under the Administration of Cost Accounting Standards clause. The Contractor also shall comply with any cost accounting standard which hereafter becomes applicable to such a contract or subcontract. Such compliance shall be required prospectively from the date of applicability to such contract or subcontract. Compliance shall continue until the Contractor completes performance of work under this contract.

(3) Agree to an equitable adjustment (as provided in the Changes clause of this contract, if any) if the contract cost is affected by a change which, pursuant to (2) above, the Contractor is required to make to his established cost accounting practices whether such practices are covered by a Disclosure Statement or not.

(4) Negotiate with the Contracting Officer to determine the terms and conditions under which a change to either a disclosed cost accounting practice or an established cost accounting practice, other than a change under (a)(3) above or (a)(6) below, may be made. A change to a practice may be proposed by either the Government or the Contractor, Provided, however, That no agreement may be made under this provision that will increase costs paid by the United States.

6.2.7 Cost Accounting Standards--Nondefense Contract (1-3.1204-2(a)) Cont'd.

(5) Agree to an adjustment of the contract price or cost allowance, as appropriate, if it or a subcontractor fails to comply with the applicable Cost Accounting Standards or to follow any practice disclosed or established pursuant to subparagraph (a)(1) or (a)(2) above and such failure results in any increased costs paid by the United States. Such adjustment shall provide for recovery of the increased costs to the United States together with interest thereon computed at the rate determined by the Secretary of the Treasury pursuant to Pub. L. 92-41 (50 U.S.C. App. 1215(b)(2)), or 7 percent per annum, whichever is less, from time the payment by the United States was made to the time the adjustment is effected.

(6) Negotiate an equitable adjustment (as provided in the Changes clause of this contract, if any) when the parties agree to a change to either a disclosed cost accounting practice or an established cost accounting practice.

(b) The Contractor shall permit any authorized representatives of the head of the agency, of the Cost Accounting Standards Board, or of the Comptroller General of the United States to examine and make copies of any documents, papers, or records relating to compliance with the requirements of this clause until the expiration of 3 years after final payment under this contract or such lesser time specified in the Federal Procurement Regulations (FPR) part 1-20.

(c) Unless a subcontract or Subcontractor is exempt under rules or regulations prescribed by the administrator of General Services, the Contractor: (1) shall include the substance of this clause including this paragraph (c) in all negotiated subcontracts under this contract with subcontractors that are currently performing a national defense contract or subcontract that contains the clause entitled to Cost Accounting Standards and that are currently required to accept the clause in applicable national defense awards, and (2) shall include the substance of the Consistency of Cost Accounting Practices--Non-defense Contract clause set forth in § 1-3.1204-2(b) of the FPR in negotiated subcontracts under this contract with all other subcontractors. The Contractor may elect to use the substance of the solicitation notice set forth in § 1-3.1203-2(b) of the FPR in his determination of applicability cost accounting standards to subcontracts.

(d) The terms defined in § 331.20 of Part 331 of Title 4, Code of Federal Regulations, shall have the same meaning herein. As there defined, "negotiated subcontract" means "any subcontract except a firm fixed-price subcontract made by a contractor or subcontractor after receiving offers from at least two firms not associated with each other or such contractor or subcontractor, providing (1) the solicitation to all competing firms is identical, (2) price is the only consideration in selecting the subcontractor from among the competing firms solicited, and (3) the lowest offer received in compliance with the solicitation from among those solicited is accepted."

(e) The administration of this clause by the Government shall be accomplished in conjunction with the administration of the Contractor's national defense contracts and subcontracts subject to rules and regulations of the Cost Accounting Standards Board, pursuant to the Administration of Cost Accounting Standards clause. For the purposes of the Administration of Cost Accounting Standards clause contained in this contract, references to the Cost Accounting Standards clause shall be deemed to include this Cost Accounting Standards--Nondefense Contract clause and reference to the Disclosure and Consistency of Cost Accounting Practices clause shall be deemed to include the Consistency of Cost Accounting Practices--Nondefense Contract clause.

6.2.8 Administration of Cost Accounting Standards (1-3.1204-1(b))

For the purpose of administering Cost Accounting Standards requirements under this contract, the Contractor shall:

(a) Submit to the cognizant Contracting Officer a description of the accounting change and the general dollar magnitude of the change to reflect the sum of all increases and the sum of all decreases for all contracts containing the Cost Accounting Standards clause or the Disclosure and Consistency of Cost Accounting Practices clause:

(1) For any change in cost accounting practices required to comply with a new cost accounting standard in accordance with paragraph (a)(3) and (a)(4)(A) of the Cost Accounting Standards clause within 60 days (or such other date as may be mutually agreed to) after award of a contract requiring such change;

(2) For any change to cost accounting practices proposed in accordance with paragraphs (a)(4)(B), (a)(4)(C) of the Cost Accounting Standards clause or with paragraph (a)(3) or (a)(5) of the Disclosure and Consistency of Cost Accounting Practices clause not less than 60 days (or such other date as may be mutually agreed to) prior to the effective date of the Proposed change;
or

(3) For any failure to comply with an applicable Cost Accounting Standard or to follow a disclosed practice as contemplated by paragraph (a)(5) of the Cost Accounting Standards clause or with paragraph (a)(4) of the Disclosure and Consistency of Cost Accounting Practices clause within 60 days (or such other date as may be mutually agreed to) after the date of agreement of such noncompliance by the Contractor.

(b) Submit a cost impact proposal in the form and manner specified by the cognizant Contracting Officer within sixty (60) days (or such other date as may be mutually agreed to) after the date of determination of the adequacy and compliance of a change submitted pursuant to (a) (1), (2), or (3), above.

(c) Agree to appropriate contract and subcontract amendments to reflect adjustments established in accordance with paragraphs (a)(4) and (a)(5) of the Cost Accounting Standards clause or with paragraphs (a)(3), (a)(4), or (a)(5) of the Disclosure and Consistency of Cost Accounting Practices clause.

(d) When the subcontract is subject to either the Cost Accounting Standards clause or the Disclosure and Consistency of Cost Accounting Practice clause so state in the body of the subcontract and/or in the letter of award. Self-deleting clauses shall not be used.

(e) Include the substance of this clause in all negotiated subcontracts containing either the Cost Accounting Standards clause or the Disclosure and Consistency of Cost Accounting Practices clause. In addition, include a provision in these subcontracts which will require such subcontractors, within 30 days after receipt of award (or such other date as may be mutually agreed to) to submit the following information to the Contract Administration Office Cognizant of the subcontractor's facility.

6.2.8 Administration of Cost Accounting Standards (1-3.1204-1(b)) Cont'd.

- (1) Subcontractor's name and subcontract number.
- (2) Dollar amount and date of award.
- (3) Name of Contractor making the award.
- (4) A statement as to whether the subcontractor has made or proposes to make any changes to accounting practices that affect prime contracts or subcontracts containing the Cost Accounting Standards clause or Disclosure and Consistency of Cost Accounting Practices clause unless such changes have already been reported. If award of the subcontract results in making a cost accounting standard(s) effective for the first time, this shall also be reported.

(f) For negotiated subcontracts containing the Cost Accounting Standards clause, require the subcontractor to comply with all Standards in effect on the date of final agreement on price as shown on the subcontractor's signed Certificate of Current Cost or Pricing Data or date of award, whichever is earlier.

(g) In the event an adjustment is required to be made to any subcontract hereunder, notify the Contracting Officer in writing of such adjustment and agree to an adjustment in the price or estimated cost and fee of this contract, as appropriate, based upon the adjustment established under the subcontract. Such notice shall be given within 30 days after receipt of the proposed subcontract adjustment, and shall include a proposal for adjustment to such higher tier subcontract or prime contract as appropriate.

(h) When either the Cost Accounting Standards clause or the Disclosure and Consistency of Cost Accounting Practices clause and this clause are included in subcontracts, the term "Contracting Officer" shall be suitably altered to identify the purchaser.

6.2.9 Cost Accounting Standard Withdrawal

Cost Accounting Standard 414--Cost of money as an element of the cost of facilities capital--shall not be reimbursed as an allowable cost under this contract.

Section 7.0 Contract Documents

Article 7.1 - Documents Incorporated Physically

The following listed documents are physically incorporated in this contract:

Cover Sheet	Award/Contract-SF26
Listing of Contract Articles	
Contract Articles	The Schedule
Attachment A	Award Fee Determination Plan
Attachment B	Letter of Credit Instructions for Recipient Organizations
Appendix A	General Provisions
Appendix B	Subcontracting Plan for Utilization of Small, Women Owned, Labor Surplus, Socially and Economically Disadvantaged Businesses